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ABSTRACT

In 1989-90, the General Education Task Force of the Wisconsin Technical College System (WTCS) was convened to determine the role of the general education curriculum in the attainment of skills that enhance the likelihood of success among technical college graduates in their careers, homes and communities. The Task Force consisted of at least one representative from each WTCS district. Using guidelines established by the Task Force, faculty subcommittees defined specific competencies and attempted to design a curriculum to achieve the desired outcomes. A statewide conference of over 200 instructors then produced specific recommendations for a 15-credit General Education core curriculum meant to develop skills in communications, computation, critical thinking, ethics, global awareness, self-awareness, social interaction, and science and technology. The bulk of this final report of the Task Force consists of sections containing the following: (1) a description of the General Education core; (2) a transfer grid of the General Education Core within the WTCS; (3) detailed course descriptions for Communications, Social Science, and Mathematics, covering desired competencies, minimum expectations, components, suggestions, and notes on instructional methodologies; (4) further considerations regarding methodologies employed to achieve desired outcomes; (5) recommendations for further consideration by the Task Force from the Subcommittees on Social Science, Mathematics and Science; and (6) "Instructor Position on Conditions to Support Teaching Statewide Communication Competencies," prepared by Jill Stiemsma and Gary Kirby at the request of 35 instructors representing 16 districts. (JSP)

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Wisconsin Technical College System

TASK FORCE ON THE ROLE OF GENERAL EDUCATION IN ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

FINAL REPORT AND RECOMMENDATIONS

By
Lori Weyers
and
Philip Langerman

JUNE 22, 1990

Submitted to:

Instructional Services Administrators
and
Wisconsin Technical College Presidents Association

JC920150

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PREFACE

> What are the outcomes that are essential for a quality Associate in Applied Science degree; what human skills must technical college graduates possess in order to enhance their likelihood for success in career, home, and community; and how does a general education curriculum contribute to the attainment of these outcomes and skills?

These were the central questions which gave the General Education Task Force its focus and direction. With these questions in mind, we were cautiously optimistic that the Task Force could fulfill the following charges:

1. Assess curriculums in communications, social and behavioral sciences, mathematics, and science.
2. Recommend common course core competencies, course descriptions, course titles, and course numbering systems.
3. Make recommendations on faculty preparation and qualifications.
4. Develop a recommended articulation arrangement between the 16 colleges in the Technical College System.

Achieving these goals, we felt, would strengthen general education throughout the Wisconsin Technical Colleges. We feel that the work of the Task Force has accomplished this and that it has served as a reaffirmation of the importance of general education in the total development of our students.

While the progress made by the Task Force has been significant, several critical challenges remain. Implementation will not happen automatically. It must be nurtured. As we implement, it is imperative that we remain mindful of the fact that the outcomes defined in the general education role statement (Section III) are not isolated skills. While we proceed to revise the individual courses, outlined by this Task Force Report, we must continue to pursue the broader implication of the role statement that the outcomes are not isolated by course and as such they can and must be taught across the curriculum. To assure that this happens it will be necessary to increase dialog among faculties throughout our colleges.

Preface

We want to thank the large number of committed professionals who contributed tirelessly to the work of the Task Force.

Good luck as you proceed with the challenges that this report provides.

Co-chairs: Ms. Lori Weyers
Dean, General Education and
Instructional Services
Fox Valley Technical College

Dr. Philip Langerman,
Executive Dean
Milwaukee Area Technical College

February, 1990

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Section I. Introduction

The General Education Task Force was convened April 26, 1989, to initiate a process to examine the role of the general education curriculum of the Associate in Applied Science degree. Impetus for the formation of the Task Force came from several places. The District Directors' Association had asked that the question be looked at as early as 1987. A group of Instructional Administrators and General Education Supervisors came together to address the question and issued a report entitled "Wisconsin VTAE Position Paper - General Education Credit Transfer Issue" on August 23, 1988. The transfer issue has been widely discussed and has been of particular importance to the 13 Technical Colleges that do not have a college transfer program.

Discussions between the VTAE system and UW system led to an agreement regarding transfer in May, 1989. As the work of the Task Force proceeded, it became increasingly obvious that the "transfer" issue was not just a question of transfer from the Technical Colleges to the University of Wisconsin System but was also a question of how transfers were handled between the Technical Colleges. This made the work of the Task Force all the more important.

Finally, the commitment to periodically review and assess all programming within the Technical College system contributed to the formation of the Task Force.

The membership of the Task Force represented the diversity of Wisconsin's Technical Colleges. Each district had at least one representative selected from one of the following categories:

- -Instructional Services Administrators
- -Supervisors of General Education
- -Supervisors in Occupational Programs
- -General Education Faculty
- -Occupational Faculty

An additional four members were selected from occupational advisory committees and the WBVTAE staff.

The Task Force membership list follows:

Co-Chairs: Dr. Philip Langerman, Executive Dean
Milwaukee Area Technical College

Ms. Lori Weyers, Dean of General Education
and Instructional Services
Fox Valley Technical College

Instructional Services Administrators

Mr. Merlin Gentz
Vice-President
Academic Affairs
Fox Valley Technical College

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Assistant Director
Instructional Services
Chippewa Valley Technical College

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Assistant District Director
Instructional Services
Blackhawk Technical College

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General Education
Instructional Support and Development
Moraine Park Technical College

Mr. Thomas N. Kerkes
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Education Supervisor
North Central Technical College

Mr. Tony Baez
Associate Dean
Instructional Support
Milwaukee Area Technical College

Ms. Patricia Gilson
Associate Dean
Northeast Wisconsin Technical College

Mr. Thomas Hilke
Associate Administrator
Educational Programs for General
Education and Special Education Services
Lakeshore Technical College

Mr. Michael Wittig
Program Manager
Communication Skills and Social Science
Waukesha County Technical College

Occupational Program Supervisors

Ms. Eldean Walling
Chairperson
Home Economics
Mid-State Technical College

Mr. Kurt Bents
Supervisor, Technical and Industrial
Wisconsin Indianhead Technical College

Ms. Joanne Dow
Business Education Supervisor
Chippewa Valley Technical College

General Education Faculty

Ms. Linda Schwandt
Social Science
Western Wisconsin Technical College

Mr. Richard Muirhead
Task Force Staff Representative
Milwaukee Area Technical College

Ms. Ruth Darula
Mathematics Department
Northeast Wisconsin Technical College

Ms. Hazel Connors
Communications Department
Blackhawk Technical College

Mr. Chris Cooper
Communications Department
Moraine Park Technical College

Ms. Arlene Wolf
Science Department
Fox Valley Technical College

Occupational Faculty

Ms. Lelonnie Brooks
Business Education
Gateway Technical College

Mr. Ken Tatum
Computer Applications Technology
Milwaukee Area Technical College

Ms. Katherine Harding
Secretarial Science
Truax Campus
Madison Area Technical College

Occupational Advisory Committee

Dr. James Fisher
Professor of Adult Education
University of Wisconsin-Milwaukee
High School Completion Advisory Committee
Waukesha County Technical College

Ms. Sally Rosemeyer
Registered Nurse/CESA-3
Boscobel Hospital
Nursing Advisory Committee
Southwest Technical College

Wisconsin Board of Vocational, Technical, and Adult Education

Mr. Lou Chinnaswamy
Consultant, Adult Basic Education

Mr. James Urness
Bureau Director

Ms. Mary Ann Jackson
Consultant, General Education

The Task Force met six times between April 26 and January 18, 1990. The Task Force heard presentations from Dr. Beverly Simone who discussed general education from the perspective of the "Building Communities" report and from Ms. Mary Kay Kamp who discussed the evolution of Alverno College's program since 1969. There was an extensive review of the literature addressing the role of general education, and Task Force members diligently posed these questions to their colleagues at their own institutions. The result was that the Task Force reached a great deal of consensus on what the general outcomes should be for all Associate in Applied Science graduates of the Wisconsin Technical College System. The focus of the question was, What are the core human skills that all graduates should have to function effectively in the workplace, in home and community, and in relation to upward mobility?

The outcomes defined in these early deliberations were outlined by the Task Force in the statement: "The Role of General Education in the Associate in Applied Science Degree." Having

established this belief statement about what students needed, the work of the Task Force entered a second stage. Faculty subcommittees from the specific content areas of Communications, Social Science, Mathematics, and Science further defined specific competencies and assessed to what extent their curriculum led to the desired outcomes in numerous meetings during the summer of 1989. As the new academic year approached, the faculty subcommittees had come close to consensus on what curriculum would be appropriate to achieve the desired outcomes. The work of the subcommittees was completed during a two-day state-called conference in Madison, in September, 1989. The conference was attended by more than 200 instructors from the entire state. Participants included Task Force and subcommittee members.

The inclusion of the large number of faculty members who had previously been involved in the process only through their local districts was very effective. It assured that the process would facilitate the broadest possible participation. The very intense two-day working conference produced the significant curriculum recommendations found in this report. The conference also served to increase professional dialog throughout the state. As a result of the energy at that conference, this report also contains a section of related recommendations made by the instructors' groups.

A list of Task Force recommendations appears as Section II of this report. These recommendations reflect the principal outcomes of the Task Force and will be presented to the Wisconsin Technical College's Instructional Services Administrators on February 1, 1990, for their consideration.

This report challenges each college to reflect on how well its general education core meets the outcomes defined in the statement on the "Role of General Education in the Associate in Applied Science Degree" found in Section III. Faculties are encouraged to keep the perspective provided in the statement as they review and revise curriculum.

Actual implementation of the general education curriculum which is being recommended by the Task Force will require additional development by the local districts. The course outlines (Section V) developed by the faculty subcommittees and approved by the Task Force provide course descriptions, identify course competencies, and describe minimal course expectations. These course outlines require greater definition by each of the colleges and a consideration of how individual districts choose to fulfill the course expectations as defined.

As the Task Force discussions progressed, it became increasingly clear that an additional challenge facing general education faculty from the entire state was the question of methodology. If the role statement recognizes the importance of critical

thinking, then logically it suggests that we consider methodologies that encourage critical thinking. Traditional lectures may be inappropriate. The competencies of social interaction, global awareness, etc., require a rethinking of how we teach. A brief discussion of methodologies appears in Section VI. Additionally, it was the overwhelming consensus of all of the faculty subcommittees that there is a need for faculty groups to meet annually to continue the dialog that this Task Force has stimulated.

Finally, Section VII of the report discusses understandings regarding transfer within the Technical College System, and Section VIII includes recommendations made by faculty subcommittees to be heard by the Task Force.

Section II. General Education Task Force Recommendations

1. Recommend endorsement of the "Role of General Education in the Associate in Applied Science Degree."

2. Recommend that the communications and social science courses, titles, course numbers, credit value, and competencies of the General Education Core as presented by the General Education Task Force be developed and implemented.

3. Recommend that curriculum changes for Communication Skills and Social Science be implemented no later than fall of 1991.

4. Recommend that the following courses developed by the Science Subcommittee be used as a model in redeveloping and realigning other Wisconsin Technical College science curriculums:

   Chemistry
   Anatomy and Physiology I
   Anatomy and Physiology II
   Microbiology
   Physics I
   Physics II

   It is recommended that the Science Subcommittee continue its work during 1990-1991.

5. Recommend that the Mathematics Subcommittee continue its work in developing common course titles, numbering, and content for College Algebra, Technical Mathematics, and Calculus, and in developing a transfer agreement in the area of mathematics within the Wisconsin Technical College System.

6. Recommend approval of transfer credit understandings and agreements within the Wisconsin Technical College System (pages 66 and 67).

7. Recommend that support be given to annual state-called communications, social science, mathematics, and science instructors' meetings in order to assure implementation and further development of the Task Force recommendations and to stimulate increased professional dialog among our faculties.

8. Recommend that priority be given to assessment of student readiness and corresponding remediation opportunities to ensure success in these courses.

9. Recommend that state certification standards for faculty be maintained.

10. Recommend that individual districts set Affirmative Action goals for faculty which reflect their demographic mix.

11. Recommend that district and state resources be made available for curriculum development and for implementation of the Task Force recommendations.

12. Recommend that the Wisconsin Technical College System require all Associate in Applied Science degree students to demonstrate minimum mathematics and science proficiencies.

13. Recommend that priority be given to continued support of vocational diploma programs by districts and by the Wisconsin Technical College System. It is recommended that outcomes for vocational diploma programs and their relationship to general education be addressed through a process similar to the one used by this Task Force to study the Associate in Applied Science degree.

14. Recommend that the Task Force reconvene during the academic year 1990-91 to review progress.

Note regarding faculty qualifications:

Current practice in the Wisconsin Technical College System is to require a minimum of a master's degree in the subject area, two years' work experience outside of education, and teaching experience.

All of the above recommendations were approved by the Instructional Services Administrators on February 1, 1990.

Section III. The Role of General Education in the Associate in Applied Science Degree.

It is within the mission of a technical college to provide an educational core of knowledge that enables students to integrate their education into the context of the larger society. General education provides explicit instruction in the essential lifelong skills required for success in career, home, and community. These skills, which are regularly identified by employers, employees, and educators, are broadly defined by the following eight outcomes:

COMMUNICATIONS
- shares meaning through reading, writing, speaking, and listening

COMPUTATION
- understands the use of common mathematical symbols and concepts

CRITICAL THINKING
- makes decisions through perspective, logic, and judgment

ETHICS
- possesses a sense of social, professional, and work ethics
- demonstrates maturity, responsibility, dependability, and respect for others

GLOBAL AWARENESS
- demonstrates sensitivity to the historical perspective, interdependence, and interrelatedness of world cultures and systems

SELF-AWARENESS
- recognizes one's self-worth and human potential
- recognizes the value of a positive lifestyle, lifelong learning habits, and the work ethic

SOCIAL INTERACTION
- functions sensitively and effectively in society's multiplicity of cultures, and values a multicultural society

SCIENCE AND TECHNOLOGY
- applies scientific concepts
- adapts to technical change, is aware of the impact of technology, and understands appropriate uses of technology

General Education Task Force
Wisconsin Technical Colleges
November, 1989

*In addition to the 15-credit core consisting of communications and social science courses, general education includes mathematics and sciences.

The General Education Core - 15 Credits

A minimum of three credits is required from each of the following three categories for the 15-credit-hour General Education Core. Districts are strongly encouraged to require a minimum of 6 credits in communications. The remaining 6 credits may be chosen from any of the remaining listed courses.

Communications*

801-195	Written Communication	3
801-196	Oral/Interpersonal Communication	3
801-197	Technical Reporting (Prerequisite: Written Communication)	3
801-198	Speech	3

Social Science

809-195	Economics	3
809-196	Introduction to Sociology	3
809-197	Contemporary American Society	3

Behavorial Science

809-198	Introduction to Psychology	3
809-199	Psychology of Human Relations	3

Deviation from this standard requires approval of the VTAE State Board, Director of Program Development and Operations in consultation with General Education consultant and appropriate occupational consultants.

*Madison Area Technical College and Milwaukee Area Technical College offer parallel communications courses at the 200 level with very similar titles. Therefore, the Task Force agreed that MATC, Milwaukee and Madison will continue to provide integrated communication skills courses 151 Communication Skills I and 152 Communications Skills II, and there will be transferability among all 16 Technical College Districts. See Pages 5, 6, and 7 for specific transfer recommendations.

General Education includes mathematics and science in this report although they are not part of the 15-credit core.

Transfer Of The General Education Core Within The Wisconsin Technical College System

The General Education Task Force agreed that the competencies defined in the General Education Role Statement could be attained using a variety of curriculums. Therefore, while the Task Force does propose a common curriculum model, it also accepts the need for individual colleges to develop different models as local needs may dictate. The guiding principle is the Role Statement, and it is expected that all curriculum development will keep the focus provided by that statement.

Transfer within the Wisconsin Technical College System will be facilitated through the following understanding:

> The General Education core courses completed as partial fulfillment of the requirements for an Associate in Applied Science degree at one of the Wisconsin Technical College System will be honored by the other colleges to satisfy the General Education requirements.

Transfer Recommendations:

1. The following course-by-course transfers will be accepted; within the Wisconsin Technical College System:

   A. 801-151 Communications Skills 1 (Madison Area Technical College and Milwaukee Area Technical College) fulfills the requirement for 801-195 Written Communication and vice versa.

   B. 801-152 Communications Skills 2 (MATC and MATC) fulfills the requirement for 801-196 Oral/Interpersonal Communication, 801-197 Technical Reporting, or 801-198 Speech and vice versa.

   C. 809-196 Introduction to Sociology and 809-197 Contemporary American Society can be used intechangeably.

   D. 809-198 Introduction to Psychology can be substituted for 809-199 Psychology of Human Relations.

2. Core courses are not limited to the above. Individual districts may adopt other courses as part of the 15- credit core according to local needs.

TRANSFER GRID WITHIN THE
WISCONSIN TECHNICAL COLLEGE SYSTEM

100 level courses - 200 level courses

	13 colleges*	MATC-Madison	MATC-Milwaukee
Communications	801-195 Written Communication	801-201 English Composition I	801-201 English 1
	801-196 Oral/Interpersonal Communication	(No equivalent course)	810-203 Interpersonal Communication
	801-197 Technical Reporting	801-197 Technical Reporting	801-208 Technical Communications
	801-198 Speech	810-201 Fundamentals of Speech	810-201 Elements of Speech 1
Social Sciences	809-196 Introduction to Sociology	809-203 Introduction to Sociology	809-203 Introduction to Sociology
	809-198 Introduction to Psychology	809-231 Introduction to Psychology	809-231 Introduction to Psychology

*Refers to the 13 colleges within the system without AA degree granting authority.

TRANSFER GRID WITHIN THE WISCONSIN TECHNICAL COLLEGE SYSTEM

100 level courses

13 Colleges*	MATC Madison and MATC Milwaukee
801-195 Written Communication	801-151 Communications Skills 1
801-196 Oral/Interpersonal or 801-197 Technical Reporting or 801-198 Speech	801-152 Communications Skills 2
809-196 Introduction to Sociology	809-197 Contemporary American Society
809-198 Introduction to Psychology can be substituted for 809-199 Psychology of Human Relations but not vice versa	

*Refers to the 13 colleges within the system without AA degree granting authority.

COMMUNICATIONS SUBCOMMITTEE

The following persons participated in at least one meeting:

Regina Arbisi-Ebert - BTC
Hazel Connors - BTC
Jerry Schug - CVTC
Bev Paulick - FVTC
Karen Stern - FVTC
Ron Toshner - FVTC
Dana Zimmerman - FVTC
Dick Gage - GTC
George Jacobsen - GTC
Gary Kirby - GTC
Brigitte Hokmann - LTC
Pat Sather - LTC
James Smith - LTC
Robert Brien - MATC-Madison
Marilyn Carien - MATC-Madison
Kay Harding - MATC-Madison
Jim McGonigle - MATC-Madison
Nathan Weigt - MATC-Madison
Luann Adams - MTC
Willette Calvin - MATC-Milwaukee
Mark Connelly - MATC-Milwaukee
Janet Matthews - MATC-Milwaukee
Christine Cooper - MPTC
Alice Iaquinta - MPTC
Orville Moore - MPTC
Jill Stiemsma - MPTC
Jean Woolley - MPTC
Lynn Nuttall - Nicolet
Pat Evenson - NCT
Mary O'Flyng - NCT
Mary Brignall - NWTC
Joanne Rathburn - NWTC
Lois Wagner - SWTC
Tom Cheesebro - WCTC
Rich Upsel - WCTC
Michael Wittig - WCTC
Mary O'Sullivan - WWTC
Darlene Parkinson - WWTC
Pat Rochelt - WWTC
Jay Soldner - WWTC
Phil Keezer - WITC
Marge Kolbek - WITC
Bill Rhinger - WITC

COURSE TITLE: Written Communication

COURSE NUMBER: 801-195

CREDITS: 3

COURSE DESCRIPTION: Teaches the writing process which includes prewriting, drafting, revising, and editing. Through a variety of writing assignments, the student will analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content.

COMPETENCIES:

Employ the writing process: prewrite, draft, revise, edit.

MINIMUM EXPECTATIONS
Assignments are to be selected from at least eight of the listed examples.

EXAMPLES
Reports
Business letters
Memos
Essays
Instructions
Proposals
Description
Narration
Exposition
Persuasion
Research Paper
Job-Seeking Documents
Synthesis
Questionnaire
Summary
Abstract
Minutes
Definition
Paragraph

COMPONENTS
Audience analysis
Organization
Purpose
Research
Format/Design
Subject Matter/Content

QUALITIES
Unity
Coherence
Continuity
Consistency
Conciseness
Correctness (grammar, spelling, punctuation, capitalization, syntax, professional appearance, legibility)
Completeness
Clarity

COURSE TITLE: Oral/Interpersonal Communication

COURSE NUMBER: 801-196

CREDITS: 3

COURSE DESCRIPTION: Focuses upon developing speaking, nonverbal, communication, and listening skills through individual speeches, group activities, and other projects.

COMPETENCIES:

Demonstrate effective interpersonal communication skills: speaking, listening, nonverbal.

Function effectively in group communication situations.

Function effectively in one-on-one communication situations.

Exhibit appropriate nonverbal behavior.

Interpret nonverbal messages.

Employ effective listening skills.

Respond with appropriate feedback.

Employ conflict resolution skills.

Recognize the impact of self-concept in the communication process.

Recognize that people perceive differently.

Deliver various types of presentations for specific audiences.

<u>The following minimum expectations, examples, and components apply to both competencies</u>

MINIMUM EXPECTATIONS
All students will deliver two speeches, participate in one group presentation, and complete five additional activities from the list of examples.

EXAMPLES
Speeches
- Demonstration
- Information
- Persuasion
- Instruction

Group Work
- Role playing
- Negotiations
- Discussions
- Problem-solving
- Brainstorming
- Panel
- Forum
- Symposium
- Focus groups
- Debate
- Interview
- Telephone skills
- Note-taking
- Feedback - Send/Receive
- Outlining
- Self-analysis
- Active listening
- Proxemics
- Kinesics

COMPONENTS
Audience analysis
Organization
Purpose
Research
Delivery
Content
Audiovisual aids

COURSE TITLE: Technical Reporting

COURSE NUMBER: 801-197

CREDITS: 3

COURSE DESCRIPTION: Teaches the preparation and presentation of oral and written technical reports. Types of reports may include lab and field reports, proposals, technical letters and memos, technical research reports, and case studies. Designed as an advanced communication course for students who have completed at least the prerequisite introductory writing course.

PREREQUISITE: Completion of Written Communication (801-195) or special permission of instructor.

COMPETENCIES:

Prepare technical documents using the writing process: prewrite, draft, revise, edit.

Deliver various types of oral technical presentations for specific audiences.

<u>The following minimum expectations, examples, components, and qualities apply to both competencies</u>

MINIMUM EXPECTATIONS
Assignments are to be selected from at least four of the suggested written products, one major formal research paper, and one oral presentation. Products marked* are required of all students.

EXAMPLES
*Formal technical research report
*Oral reports
Technical letters
Technical memos
Progress report
Process report: Expository; Instructional
Definition
Inspection
Evaluation
Investigation
Proposal
Feasibility
Field trip report
Lab reports
Case study
Occurrence report
Description

COMPONENTS
Audience analysis
Organization
Research
Format/Design/Presentation
Subject matter/Content
Computer-generated documents
Graphics
Collaborative reporting/writing/editing
Ethics

QUALITIES
Unity
Coherence
Continuity
Consistency
Conciseness
Correctness (grammar, spelling, punctuation, capitalization, syntax, professional appearance, legibility, appropriate technical style)
Completeness
Appropriate technical vocabulary
Clarity

COURSE TITLE: Speech

COURSE NUMBER: 801-198

CREDITS: 3

COURSE DESCRIPTION: Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course.

COMPETENCIES:

Employ the speaking process: analyze audience and purpose, research, organize, rehearse, deliver, evaluate.

Listen, comprehend, analyze, and evaluate presentations for purpose, content, delivery, and organization.

<u>The following minimum expectations, examples, components, and qualities apply to both competencies</u>

MINIMUM EXPECTATIONS
Six presentations are to be selected from the list of examples. Products marked * are required of all students.

EXAMPLES
*Informative
*Persuasive
*Group Activity
*Instruction
Special occasion
Sales presentation
Interpretive reading
Seminar and conference speaking
Announcements
Argumentation
Describing an event
Demonstration
Introductory
Accepting award
Commemorative
Eulogy
Oral Report
Interviews
Manuscript reading
Debate
Impromptu

COMPONENTS
Audience analysis
Organization
Purpose
Research (Evidence)
Delivery
Content
Audiovisual aids
Body language
    Voice qualities (tone, volume, rate, pitch)
    Eye contact
    Posture
    Gestures
    Appearance

QUALITIES
Adjusting to audience reaction
Enthusiasm for topic and audience
Speaker credibility
Appropriate language
Managing anxiety (fear, nervousness)
Using allotted time effectively

NOTE ON INSTRUCTIONAL METHODOLOGIES:

Students learn to speak by speaking. It is recommended that:

1. a total of 30 to 45 minutes of speaking time be allotted to each student. This total time should be broken into various speaking assignments.

2. speeches be videotaped so that students can evaluate their progress.

SOCIAL SCIENCE SUBCOMMITTEE

Co-Chairpersons

Patty Gilson, NTC
Linda Schwandt, WWTC

Subcommittee Participants

Rita Baltus, NTC
Gerald Briggs-Dineen, LTC
Lonnie Brooks, GTC
Lee Button, FVTC
Patricia Ebert, WCTC
Alice Iaquinta, Moraine Park-West Bend
Louis Maris, MATC-Milwaukee
Dick Muirhead, MATC-Milwaukee
Bill Reinhardt, Moraine Park
Lee Susa, MSTC
Shirley Sweet, BTC
LeRoy Thielman, Moraine Park
Mary Ann Van Slyke, NTC
Jim Walsh, MATC-Milwaukee
Mike Wittig, WCTC

COURSE TITLE: ECONOMICS

COURSE NUMBER: 809-195

CREDITS: 3

COURSE DESCRIPTION: This course is designed to give an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

COMPETENCIES:

1. Develop the rationale for economic systems (Opportunity Costs)
2. Contrast alternative economic systems
3. Apply supply and demand analysis to price determination
4. Identify factor markets - Labor and Productivity
5. Utilize marginal (Cost-Benefit) analysis in decision-making
6. Evaluate government's role in the economic system
7. Analyze the use of stabilization policy (Fiscal and Monetary)
8. Interpret the impact of economic policy on contemporary public issues
9. Comprehend causes and consequences of inflation, unemployment, and economic growth
10. Explain fluctuations in economic activity (Business Cycles)
11. Assess the impact of a global economy (Trade and Finance)

ECONOMICS - HOW COURSE ADDRESSES CORE OUTCOMES

E = Explicity Taught R = Reinforced O = Not Addressed

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1. Communication

R - writing and speaking so others can understand
R - correct application of English language (spelling, grammar, structure)
R - effective listening
O - impact of nonverbal communication
O - basic job-seeking skills

2. Use of Technology

E - mastery of appropriate technical skills
E - emerging and changing technology
R - computer literacy
E - awareness of impact of technology

3. Critical Thinking

E - perseverance through difficult problems
E - substantiation of point of view
E - open mindedness
E - recognition of differences between fact and opinion
E - analysis and evaluation
E - problem-solving and logical judgment
E - inductive and deductive reasoning

4. Social Interaction

R - understanding patterns of human development
R - ability to function effectively with others in the community
E - knowledge of organizational structure
R - appreciation of the diversity of values and cultural differences among people
E - acceptance of responsibility for one's behavior

5. Self-Awareness

E - development of values and priorities
E - flexibility and adaptation to change
R - self-esteem/self-concept
R - commitment to lifelong learning
O - health/wellness awareness
O - effective use of leisure time
R - appreciation of the humanities
R - time management and organizational skills

6. Computational Skills

E - entry level and consumer competence
E - computational accuracy
E - accurate analysis of mathematical data

7. Global Awareness

E - economic literacy
E - understanding of political institutions
R - appreciation of cultural differences
E - acknowledgment of the interdependence of the global environment

8. Ethics

R - ethical behavior - personal, social, professional, environmental
E - work ethic - attitude - loyal, committed to quality

The American Institutions/Sociology Subcommittee made the following generalizations about both courses:

1. American Institutions

   Crossdisciplinary: sociology, social problems, political science, anthropology, history

   Major topic areas:

   - Family
   - Education
   - Religion
   - Government
   - Economics
   - Social issues
   - Consumer issues
   - Global interrelationships

2. Sociology

   Similar major topic areas
   However, more theoretical and research-based

COURSE TITLE: Introduction to Sociology

COURSE NUMBER: 809-196

CREDITS: 3

COURSE DESCRIPTION:

Introduction to Sociology is a social science course designed to introduce students to the basic social concepts of the intercultural discipline of sociology. Emphasis is given to the following special areas: culture, socialization, social stratification, and the five institutions, including family, politics, economics, religion, and education. Examples of other topics include: demography, deviance, technology, environment social issues, social change, and social organization.

INTRODUCTION TO SOCIOLOGY - HOW COURSE ADDRESSES CORE OUTCOMES

E = Explicitly Taught R = Reinforced O = Not Addressed

1. Social Interaction

E	perseverance through difficult problems
E	ability to function effectively with others in the community
E	knowledge of organizational structure
E	appreciation of the diversity of values and cultural difference among people

2. Global Awareness

E	economic literacy
E	understanding of political institutions
E	appreciation of cultural differences
E	acknowledgment of the interdependence of the global environment

3. Critical Thinking

E	perseverance through difficult problems
E	substantiation of point of view
E	open mindedness
E	recognition of differences between fact and opinion
E	analysis and evaluation
E	problem-solving and logical judgment
R	inductive and deductive reasoning

4. Ethics

E/R	ethical behavior - personal, social, professional, environmental
E/R	work ethic - attitude - loyal, committed to quality workmanship, responsible, motivated

5. Self-Awareness

E	development of values and priorities
E	flexibility and adaptation to change
E	self-esteem/self-concept
E	commitment to lifelong learning
E	health/wellness awareness
E/R	effective use of leisure time
R	appreciation of the humanities
E	time management and organizational skills

COMPETENCIES:

1. Develop an awareness of the cultural components of society.
2. Recognize the various influences of socialization personality development.
3. Examine social stratification and social inequality and their consequences.
4. Explain the functions and structure of each of the five institutions (family, education, religion, government, economics, and emerging institutions).
5. Gain knowledge of group social interaction.
6. Examine relevant domestic and international social issues.
7. Explore factors contributing to social change.

COURSE TITLE: Contemporary American Society (formerly American Institutions 809-153)

COURSE NUMBER: 809-197

CREDITS: 3

COURSE DESCRIPTION:

In this interdisciplinary course students examine the network of interdependent social systems which affect them as employees, family members and citizens. Students study public policy issues which illustrate how our traditional institutions such as family, education, media, the workplace, the economy, and government are being changed by global, political, demographic, multicultural, and technological trends. By exploring contemporary issues, students expand their use of creative and critical thinking skills in evaluating information, making a decision, advocating a position, and participating in the democratic process.

GENERAL OBJECTIVES:

1. Participation

   participate more effectively in the American political process

2. Trends

   to more clearly interpret technological, labor market, and economic trends which affect students' future family and work lives

3. Global

   to analyze American issues and institutions to increase awareness of their global context and linkages

4. Students will practice the skills which enable them to become involved in their own communities, in the issues which they find important to their lives.

CONTEMPORARY AMERICAN SOCIETY - HOW COURSE
ADDRESSES CORE OUTCOMES

E = Explicitly Taught R = Reinforced O = Not Addressed

1. Communication

R writing and speaking so others can understand
R correct application of English language (spelling, grammar, structure)
R effective listening
R impact of nonverbal communication
O basic job-seeking skills

2. Use of Technology

O mastery of appropriate technical skills
E emerging and changing technology
R computer literacy

3. Critical Thinking

E perseverance through difficult problems
E substantiation of point of view
E open mindedness
E recognition of differences between fact and opinion
E analysis and evaluation
E problem-solving and logical judgement
E inductive and deductive reasoning

4. Social Interaction

E understanding patterns of human development
E ability to function effectively with others in the community
E knowledge of organizational structure
E appreciation of the diversity of values and cultural differences among people
E acceptance of responsibility for one's behavior

5. Self-Awareness

E development of values and priorities
E flexibility and adaptation to change
R self-esteem/self-concept
E commitment to lifelong learning
R health/wellness awareness
R effective use of leisure time
R appreciation of the humanities
R time management and organizational skills

6. Computational Skills

R entry level and consumer competence
R computational accuracy
E accurate analysis of mathematical data

7. Global Awareness

E economic literacy
E understanding of political institutions
E appreciation of cultural differences
E acknowledgment of the interdependence of the global environment

8. Ethics

E ethical behavior - personal, social, professional, environmental
E work ethic - attitude - loyal, committed to quality workmanship, responsible, motivated

COURSE TITLE: Introduction to Psychology

COURSE NUMBER: 809-198

CREDITS: 3

COURSE DESCRIPTION:

This introductory course in psychology is a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings.

GOALS:

1. Develop introductory level skills of communication to use both terminology and quantitative measures common to the discipline.

2. Enhance critical thinking skills when facing ethical dilemmas, social concerns, and individual issues.

3. Appreciate the dynamics inherent in the perception of individual differences and cultural diversity.

4. Recognize one's self-worth and potential for pro-social behavior.

5. Gain familiarity with the impact of modern technology on human behavior.

COMPETENCIES:

Upon successful completion of this course the student will be able to:

1. Identify theories and historical origins of the science of psychology and utilize the terminology appropriately.

2. Distinguish between adequate and inadequate research studies.

3. Relate physiological processes and hereditary influences to behavior.

4. Demonstrate an understanding of consciousness, its altered states and the processes of sensation and perception.

5. Demonstrate knowledge of social influences on individual behavior to include values, beliefs, attitudes, cultural diversity, and gender/race equity.

6. Apply principles of cognitive processes to include information processing, memory, intelligence, and problem-solving.

7. Describe physiological processes of emotions and the stress response and specify appropriate coping strategies.

8. Describe various theories of personality development and methods of measuring individual differences.

9. Recognize characteristics of psychopathological conditions and describe treatment approaches with awareness of broader mental health issues.

10. Identify and describe the factors operating in the concept of motivation.

The Task Force recognizes the following as separate unit topics and as frequent additions to the above:

DSM-IIIR
Growth and Development
Exceptional Persons
Sexuality

The Psychology Subcommittee agrees that Introduction to Psychology and Psychology of Human Relations differ in several ways:

Introduction to Psychology places greater emphasis on:

1. terminology of the discipline
2. the study of neurological and endocrine systems including stress
3. heredity, genetic counseling, and related concepts
4. research, methodology, and the scientific method
5. the historical origins of the discipline
6. therapeutic approaches and special needs population
7. assessment and the evolution of psychometrics

Psychology of Human Relations is more of an applied psychology course emphasizing the human relations skills necessary to be successful in work, home, and society.

COURSE TITLE: Psychology of Human Relations

COURSE NUMBER: 809-199

CREDITS: 3

COURSE DESCRIPTION:

The Psychology of Human Relations course explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

PREREQUISITES: No prerequisites

GOALS:

Communication

- Practice expression and control of emotions
- Engage in effective interpersonal relationships

Computation

- Reinforced through analysis of date/research

Critical Thinking

- The student applies CRITICAL THINKING to effective PROBLEM-SOLVING

Ethics

- The student works COOPERATIVELY and PRODUCTIVELY
- The student engages in effective INTERPERSONAL RELATIONSHIPS

Global Awareness

- The student ADAPTS to ever-changing life/work experiences
- The student works COOPERATIVELY and PRODUCTIVELY
- The student engages in effective INTERPERSONAL RELATIONSHIPS

Self-Awareness

- The student develops an increased awareness of SELF
- The student recognizes the relationship between MOTIVATION and behavior

- The student deals more effectively with STRESS
- The student practices expression and control of EMOTIONS
- The student applies principles of LEARNING to personal and occupational challenges
- The student applies CRITICAL THINKING to effective PROBLEM-SOLVING

Social Interaction

- The student ADAPTS to ever-changing life/work experiences
- The student works COOPERATIVELY and PRODUCTIVELY
- The student engages in effective INTERPERSONAL RELATIONSHIPS

Types of Techniques

- Reinforced by computer-interactive learning

COMPETENCIES:

NOTE: The instructor will facilitate learning experiences that will give students opportunities to achieve the following ever-emerging process; hence, definitive measurement within a semester may be impossible.

1. The student develops an increased awareness of SELF
2. The student recognizes the relationship between MOTIVATION and behavior
3. The student deals more effectively with STRESS
4. The student practices expression and control of EMOTIONS
5. The student ADAPTS to ever-changing life/work experiences
6. The student applies principles of LEARNING to personal and occupational challenges
7. The student works COOPERATIVELY and PRODUCTIVELY
8. The student engages in effective INTERPERSONAL RELATIONSHIPS
9. The student applies CRITICAL THINKING to effective PROBLEM-SOLVING

PSYCHOLOGY OF HUMAN RELATIONS

I.	Introduction -	Psychology and scientific methods
	Material	Psychological concepts Personality Heredity - environment Sensitivity - perception
II.	Self-Perception - Self-Concept	Wellness Holistic Health Stress Management Problem-solving Adjustment - maladjustment Emotions - attitudes - values Awareness - consciousness
		Self-concept Self-control Self-responsibility Learning maturation and development
III.	Human Relations	Skills - work - home - family Conflict resolution Assertiveness Group dynamics Productivity Social perception

PSYCHOLOGY OF HUMAN RELATIONS
SUGGESTION LIST

1. SELF
   - Self-concept
   - Self-control
   - Holistic health
   - Mental Health Continuum
   - Personality (Healthy) Development
   - Self-esteem
   - Self-fulfilling prophecy
   - Assertiveness

2. MOTIVATION (Theories of:)
   - Define motivation (intrinisic/extrinsic)
   - Maslow/hierarchy/McClelland
   - Goal-setting
   - Locus of control
   - Self-motivation
   - Risk-taking (change seeker) - sensation seeking
   - Rational/emotive therapy
   - Attribution theory
   - Sex differences
   - Motive levels
   - Needs/wants
   - Perception

3. STRESS
   - What is stress?
   - Types of stress
   - Effects of stress
   - Techniques to deal with stress
   - Where to get help (therapies)
   - Coping styles
   - Stress seekers/Stress avoiders
   - Abnormality
   - Defense mechanisms
   - Wellness

4. EMOTIONS
   - Understanding types of emotions: positive, negative, anger; shame-hurt, depression, grief
   - Appropriate expression of emotion
   - Self-control
   - Mental illness (abnormalities/maladjustment)
   - Rational/emotive therapy
     - Development of
     - Theories of
   - Defense mechanisms
   - Perception

5. ADJUSTMENT

Goal-setting
Decision-making
Dealing with change (making changes)
Normal/Abnormal
Coping techniques
Defense mechanisms
Critical thinking
Personality
Social pressure
Conflict
Dealing with loss
Altered states to include:
alcohol and other drugs

6. LEARNING

Conditioning/Behavior modification
classical, operant, desensitization
Social learning
Effects of learning on our lives
Types of Reinforcement
Career development/Lifelong learning
Phobias
Effects of punishment

7. WORKS COOPERATIVELY AND PRODUCTIVELY

Teamwork/Team building
Group dynamics
Conflict resolution -
Problem-solving
Strategies for success on the job
Work ethics
Interpersonal relations
Understanding organizations
The work environment
Sexual harassment

8. LEADERSHIP (Interpersonal Relations)

Communicating in relationships
Conflict resolution
Special relationships
Morality/Values
Assertiveness
Attitudes/Prejudice
Appreciating differences/sexual, cultural
Cultural awareness
Friendships (dating)
Marriage (love) and family
Lifestyles

9. CRITICAL THINKING - PROBLEM-SOLVING

Creativity
Steps to problem solving
Case problems
Subjective - objective thinking
Group problem solving (QC)
Consensus building
Team building
Perception

MATHEMATICS SUBCOMMITTEE REPORT

Subcommittee Membership

Bestul, Mary - MPTC
Buretta, Dan - MPTC
Burwitz, Bill - BTC
Christenson, Allen - MATC-Milwaukee
Clarke, Laura - MATC-Milwaukee
Danielson, Nancy - FVTC
Dietzman, Purl - LTC
Dupuis, Marie - MATC-Milwaukee
Dye, Jim - SWTC
Early, Dennis - WITC (New Richmond)
Hasenbach, Dave - GTC (Racine)
Henning, Bob - NCTC
Kelly, Jeanette - GTC (Elkhorn)
Koopika, Bruce - NWTC
Korth, John - Midstate
Landergott, Dennis - GTC
Lehnen, Al - MATC-Madison
Lerch, Arlan - LTC
Lieske, Jim - MATC-Milwaukee
Lorenz, Gene - WITC - (Rice Lake)
Moore, Jim - MATC-Madison
Opel, Bob - WCTC
Peterson, Roy - NWTC
Spindler, Ken - FVTC
Stelzig, Ken - CVTC
Tatum, Ken - MATC-Milwaukee
Troudt, Don - FVTC - (Oshkosh)
Vollstedt, Cathy - NCTC
Wolf, Warren - WWTC

The Wisconsin VTAE mathematics subcommittee identified three courses in the mathematics curriculum that are offered by most of the technical colleges in Wisconsin. These courses are: Algebra, Technical Mathematics, and Calculus. Course names, course numbers, and number of credits vary tremendously from school to school. Most commonly, Algebra is a 3-credit course, Technical Mathematics varies from 7 to 9 credits, and Calculus is 3 credits. Major differences in philosophy about how these courses should be structured currently exist. Some schools have their math courses structured in a generic way, with common competencies that apply to many programs. (Specific program applications are taught in program courses.) Others have chosen to make their courses much more program-specific.

In recognition of the uniqueness and autonomy of each of the 16 districts in the VTAE system in Wisconsin, we, as a committee, feel it is important to preserve each district's right to determine how courses should be constructed to meet that district's particular needs.

Attached are the lists of the common core competencies for Algebra, Technical Mathematics, and Calculus.

FOR DISCUSSION ONLY

ALGEBRA - CORE COMPETENCIES

1. Signed numbers
2. Linear equations
3. Inequalities
4. Formula evaluation
5. Rearrangement of formulas
6. Systems of equations
7. Graphing of linear equations and inequalities
8. Quadratic equations
9. Systems of equations
10. Factoring

FOR DISCUSSION ONLY

TECHNICAL MATHEMATICS - CORE COMPETENCIES

1. Real numbers
2. Equation solving
3. Fractional equations
4. Percent, proportion, variation
5. Calculator operations
6. Measurements
7. Geometry
8. Algebraic fractions
9. Formula rearrangement
10. Functions and graphs
11. Right triangles
12. Oblique triangles
13. Problem-solving
14. Systems of equations
15. Powers, roots, logarithms
16. Trigonometric functions
17. Vectors
18. Polynomials
19. Factoring
20. Quadratic equations
21. Exponents and radicals
22. Radical equations
23. Circle concepts
24. Trigonometric identities
25. Complex numbers
26. Periodic functions
27. Common logarithms
28. Natural logarithms
29. Distance formula

FOR DISCUSSION ONLY

CALCULUS - CORE COMPETENCIES

1. Graphs - functions - polynomials
2. Notation and symbols
3. Limits
4. Differentiation techniques
   a. Maximum - minimum
   b. Curve sketching
   c. Rate of change
5. Integration - basic techniques
   a. Definite - indefinite
   b. Area under curves

FOR DISCUSSION ONLY

List of Participants of Science Subcommittee
General Education Task Force
Madison, Wisconsin
September 13-14, 1989

Name	District
Co-Chairpersons	
Tom Kerkes	NTC
Arlene Wolff	FVTC
Microbiology	
Marlin White	Nicolet
Barbara Prindeville	NWTC
Kristine M. Snow	FVTC
Gary Neumann	MATC-Milwaukee
Spencer Artmen	MATC-Madison
Pat Sheridon	MPTC
Physics	
Al Gomez	GTC
Catherine Johnson	FVTC
Carston Koeller	MPTC
Ot Selgrad	NWTC
Gerald Plain	MSTC
Ron Grundeen	NTC
Roger L. Hanke	WITC
Roger Luthens	NWTC
Terry Craney	WCTC
Dirk Sueom	MATC-Madison
Paul De Rose	
Chemistry	
Ken Miller	MATC-Milwaukee
Bruce Hannemann	FVTC
Dennis Bauer	WCTC
Bruce R. Seemann	MPTC
Karen Anderson	MATC-Madison
Anatomy and Physiology	
Curt Robinson	MATC-Milwaukee
John Berg	BTC
Donna Sauer	MPTC
Bob Lemke	CVTC
Judith Olmsted	GTC
Gary L. Johnson	MATC-Madison
Arlene Wolff	FVTC
Mel Jennings	NWTC

FOR DISCUSSION ONLY

01/90

COURSE NUMBER: 806-141

COURSE TITLE: General Chemistry

CREDITS: 4 (Minimum 90 hours) (54 hours lecture, 36 hours lab)

COURSE DESCRIPTION:

The course is primarily designed for students in the allied health science fields. This is a one-semester survey course, covering a broad range of topics. Lectures and laboratory experiences cover the fundamental aspects of inorganic chemistry followed by the essentials of organic chemistry and an introduction to biological chemistry. Topics covered include elementary problem solving, atomic structure, periodicity and chemical bonding reactions and energy changes, solutions, colloids, nuclear chemistry, organic functional groups and their reactions, lipids, carbohydrates, proteins, hormones, and DNA.

PREREQUISITES:

High school chemistry, physical science, or pre-technical chemistry

GOALS:

- Understand chemical principles with practical applications, especially in medical, biological, and environmental areas.
- Identify a number of chemical principles, concepts, and cause-effect relationships that will enable students to function effectively and intelligently in their particular occupation.
- Provide laboratory experience that will help students acquire useful skills, confidence, and knowledge of safe procedures when utilizing chemicals and laboratory apparatus.
- Laboratory experience will illustrate the principles discussed in lecture.

FOR DISCUSSION ONLY

CONTENT/COMPETENCIES

CONTENT:

Topical content of a one-semester General Chemistry course:

- The Nature of Matter: Measurement of Matter
- Atomic and Molecular Structure--Electron Arrangement, Chemical Bonding, Valences, and Formula Writing--Periodic Table
- The Nature of Chemical Reactions and Writing of Chemical Equations
- Molecular Formulas, Normality and Molarity
- Properties of Gases--Oxygen, Ozone, Hydrogen
- Water, Solutions, Emulsions, Suspensions, Colloids
- Stoichiometry
- Acids, Bases, Salts, Ionization, Buffers, and Acid-Base Balance
- Oxidation-Reduction Reactions
- Organic Chemistry
- Introduction, Structure, Nomenclature and Properties
- Hydrocarbons, Alcohols, and Ethers
- Aldehydes, Ketones, Carboxyl Acids
- Esters, Amines and other Nitrogen compounds, Cyclic compounds
- Aromatic compounds, some Heterocyclic compounds in medicine, Carbohydrates, Lipids, Proteins, and Nucleic Acids
- Enzymes, Hormones, and Vitamins
- Radioactivity and Radioisotopes

COMPETENCIES:

- Review the nature and properties of matter and identify the changes that matter undergoes during chemical reactions.
- Demonstrate one's ability to perform scientific measurements and use the metric system satisfactorily.
- Convert from one system of measurement to another.
- Demonstrate and identify the structural organization of the atom.
- Relate electron structure of the atom to the type and nature of bonds formed between atoms and to the writing of formulae.
- List common types of chemical reactions and give examples.
- Indicate the factors that alter or determine reaction rates.
- Demonstrate an understanding of chemical equations by being able to write and balance correctly such equations on demand.
- Identify the properties of oxygen and define its application and function in respiration, oxidation, and oxygen therapy.
- Compare oxygen and ozone in terms of properties and function.
- List the properties and importance of hydrogen.
- Relate importance of the physical properties of water.
- Indicate types of reactions relative to water.

FOR DISCUSSION ONLY

- Define the terms: hydrates, anhydrous, efflorescent, hygroscopic, deliquescent, neutralization, and hydrolysis in relation to water chemistry.
- Demonstrate and list the properties of hard water, and show how hard water may be softened.
- Demonstrate and compare the properties of true solutions, suspensions, colloidal solutions, and emulsions, and show how they relate to the health sciences.
- Compare the common acids, bases, and salts, and show their physiological significance within the body.
- Explain the process of ionization and its importance physiologically.
- Explain body electrolytes and their relation to acid-base balance, and describe the mechanisms by which the body maintains this balance.
- Explain the chloride shift and its role in the exchange of gases during respiration.
- Demonstrate the broader concepts of redox reactions by balancing simple equations of this type, and relate oxidation and reduction to electron loss and gain within the reaction.
- Show the effect of redox reactions in the action of bleaching agents and antiseptic agents used in medicine.
- Contrast and compare organic chemistry with inorganic chemistry.
- Describe the broad scope of organic chemistry.
- Outline the classification and properties of organic compounds on the basis of their functional groups, and use this information as a foundation for the study of foodstuffs and metabolism.
- Review briefly some of the more important organic compounds used in health occupations procedures.
- Describe some of the common types of organic reactions.
- List the properties of carbohydrates, lipids, and proteins.
- Classify carbohydrates, lipids, proteins, and nucleic acids according to chemical structure.
- Indicate the sources of carbohydrates, lipids, and proteins used by the body.
- List and describe the properties of enzymes and the factors that control the rates of enzymatic reactions.
- Contrast the roles of enzymes, vitamins, and hormones in physiological processes.

FOR DISCUSSION ONLY

COURSE NUMBER: 806-161

COURSE TITLE: Microbiology

CREDITS: 4 (Minimum 90 contact hours) (54 hours lecture, 36 hours lab)
3 hour lec/wk + 2 hour lab

COURSE DESCRIPTION:

The fundamentals of Microbiology through lecture and laboratory skills will be emphasized. Topics on history, morphology and physiology, nutritional growth and metabolism, and methods available for identifications of microorganisms will be taught. The impact on the spread of diseases and type of control will be demonstrated. Common causes and sources of infection will be demonstrated. Common causes and sources of infection will be examined along with recent chemotherapy--antibiotics and immunological discoveries known in combating the powerful microbes.

PREREQUISITE:

Minimum: High school biology and high school chemistry

GOALS:

- To be able to identify bacterial, viral, and parasitic diseases by recognizing clinical symptoms and by using cultural and staining techniques to identify the pathogens.
- To be able to utilize the methods of sterilization and disinfection which are commonly used and accepted in clinics and hospitals.
- To describe the concepts that determine the spread of disease, pathogenicity of microrganisms, and host defenses.
- To develop good laboratory technique in handling bacterial cultures.

CONTENT:

The course will include the following topics (minimum):

A. Introduction to Microbiology

- Scope of microbiology: bacteria, fungi, parasites, viruses
- Relevance to Health Profession
- Historical perspective, germ theory of disease, and Koch's postulates

B. Anatomy of Procaryotic Cells: Structure and Function

- Flagella
- Pili
- Fimbriae
- Capsule
- Cell wall
- Cell membrane
- Genome
- Ribosomes
- Endospore

FOR DISCUSSION ONLY

C. Microbial Metabolism

- Glycolysis
- Aerobic and anaerobic respiration
- Fermentation

D. Microbial Growth

- Growth curve
- Nutritrional requirements
- Temperature
- Osmotic pressure
- pH

E. Control of Microbial Growth

- Sterilization, disinfection
- Bactericidal agents
- Bacteriostatic agents
- Aseptic, antiseptic, and sterile techniques
- Common physical and chemical antimicrobial methods
- Chemotherapy and antibiotic action on bacteria: broad spectrum, narrow spectrum, sensitivity testing, cell wall action vs. interruption of protein synthesis.

F. Microbial Genetics

- Genetic code
- DNA replication
- Protein sythesis
- Action of mutagens
- Genetic transfer in bacteria: conjugation, transformation, and transduction
- Function of plasmids

G. Mechanisms of Pathoginicity

- Opportunistic infections by normal flora
- Methods of transmission
- Virulence factors
- Predisposing factors

H. Nonspecific Defenses of the Host

- Normal flora
- Innate resistance
- Role of skin and mucous membranes
- Phagocytosis and complete blood counts
- Stages of inflammation
- Fever, interferon, complement

I. Specific Defenses of the Host: Immunology

- Kinds of immunity: active, passive, artificial, acquired
- Important characteristics of an antigen
- Cells involved in antibody synthesis
- Functions of classes of antibodies
- Humoral and cellular immunity
- Primary and secondary response

FOR DISCUSSION ONLY

- Hypersensitivity
- Serology (testing and titers)
- Vaccines

J. Medically Important Groups of Bacteria

Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus pyogenes
Streptococcus agalactiae
Streptococcus viridans
Streptococcus pneumoniae
Neisseria gonorrhoeae
Neisseria meningitidis
Escherichia coli
Klebsiella pneumoniae
Enterobacter
Serratia
Proteus
Salmonella
Vibrio
Yersinia
Bordetella pertussis
Hemophilus influenzae
Hemophilus ducreyi
Hemophilus aegyptius
Hemophilus parainfluenzae
Francisella tularensis
Clostridium tetani
Clostridium botulinum
Clostridium perfringens
Clostridium difficile
Bacteroides
Corynebacterium diphtheriae
Mycobacterium tuberculosis
Gardenerella vaginalis
Pseudomonas aeruginosa
Listeria monocytogenes
Legionella
Treponema pallidum
Borrelia burgdorferi
Campylobacter
Mycoplasma
Rickettsia
Chlamydia

K. Medically Important Viral Diseases

Measles
Rubella
Herpes viruses: H. simplex types 1 and 2, H. varicella, EBV, CMV
Influenza
Rhinoviruses, Coronaviruses
Rabies
Arboviruses
Poliomyelitis
Hepatitis: A, B, non A non B, and Delta virus

FOR DISCUSSION ONLY

Mumps
HIV

L. Medically important Fungal Diseases

- Superficial mycoses
  - Microsporum
  - Trichophyton
  - Epidermophyton
- Systemic Mycoses
  - Blastomyces dermatitidis
  - Candida albicans
  - Cryptococcus neofurmans
  - Histoplasma capsulatum

M. Medically Important Parasites

- Protozoans
  - Entamoeba histolytica
  - Trichomonas vaginalis
  - Giardia lamblia
  - Toxoplasma gondii
  - Naegleria fowleri
- Roundworms
  - Enterobius vermicularis
  - Trichuris trichura
  - Trichinella spiralis
- Flatworms
  - Tapeworm
  - Flukes

INSTRUCTIONAL METHODOLOGIES:

This microbiology course must include a laboratory component including the following minimum required competencies.

1. Introduction
   a. Laboratory safety rules
   b. Microscope: The student upon completing skills instruction must be able to properly focus a microscope on scan, low, high, dry, and oil immersion
   c. A septic transfer: The student must be able to inoculate bacterial cultures using aseptic techniques
2. Visualization of Microbes
   a. Staining
      - Simple stain
      - Gram stain
      - Acid-fast stain
   b. Prepare a wet mount and/or hanging drop
3. The student must be able to demonstrate basic skills in streaking, isolation, and incubation of bacterial cultures
4. The student must be able to interpret results using the following media for the isolation and identification of specific microbes

FOR DISCUSSION ONLY

a. Blood agar and hemolytic reactions
b. Selective and differential media for the isolation of gram positive and gram negative organisms
c. Perform an anaerobic culture technique

5. Identification Techniques

a. The student must be able to identify the following (by demonstration or lab experiment):
   1) 2, alpha, beta, and gamma Streptococci
   2) β Streptococci group A
   3) β Streptococci group B
   4) Streptococcus pneumoniae
   5) Staphylococcus epidermidis and Staphylococcus aureus using either mannitol or coagulase
   6) lactose fermenters and non-lactose fermenters
b. The student must be able to perform or identify the following biochemical tests (by demonstration or experiment):
   1) fermentation reactions
   2) motility
   3) indole
   4) MR-VP
   5) citrate
   6) H_2O
   7) catalase
   8) oxidase
   9) urea
   10) amino acid utilization
c. The student must be able to isolate and identify microorganisms from a mixed culture

6. The student must perform the following:

a. antibiotic sensitivity
b. throat culture
c. urine culture
d. fecal culture
e. skin culture
f. physical and chemical disinfection methods
g. serological testing

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Microbiology (ADN - Nursing)

District	Course Title	Course Number	Credits
(NWTC) Northeast	Clinical Microbiology	806-194	3/72 hrs.
(LTC) Lakeshore	Microbiology	806-120	3
(MPTC) Moraine Park	Microbiology	806-122	3
(GTC) Gateway	Microbiology	806-139	3
(MATC) Milwaukee	Microbiology	806-109	4/92 hrs.
(WCTC) Waukesha County	Microbiology	806-122	3
(BTC) Blackhawk	Micro-Biology	806-133	2
(FOUR) Madison	Microbiology	806-273	3/90 hrs.
(MSTC) Midstate			
(NCTC) North Central			
(WWTC) Western Wisconsin	Microbiology	513-105	2
(CVTC) Chippewa Valley	Applied Microbiology	806-132	3
(NATC) Nicolet	Applied Microbiology	806-150	4/108 hrs
(WITC) Indianhead	Applied Microbiology	806-122	3
(SWTC) Southwest	Applied Microbiology	806-102	3
(FVTC) Fox Valley	Applied Microbiology	806-125	3/72 hrs.

FOR DISCUSSION ONLY

01/90

COURSE NUMBER: 806-181

COURSE TITLE: Physics I

CREDITS: 4 (Minimum 90 hours) (54 hours lecture, 36 hours lab)

COURSE DESCRIPTION: Mechanics, Heat, Fluids

PREREQUISITE: Algebra, tech math, or equivalent

GOALS:

1. To support technical programs.
2. To enable the students to more successfully cope with change in employment, community and family.
3. Develop problem-solving skills, especially by applying mathematical skills to physical situations.
4. To utilize computers for data analysis in a lab setting.
5. To provide a hands-on lab experience that encourages teamwork and responsibility in the laboratory.
6. To enable students to prepare technical reports.
7. To provide an elective science to fulfill the science requirement* for a nontechnical AAS degree.

   (*As proposed by the General Education Task Force Science Subcommittee)

COMPETENCIES:

Measurement, forces and vectors, kinematics, work, energy and power, machines, heat, fluid properties, mechanical properties of materials

FOR DISCUSSION ONLY

COURSE NUMBER: 806-183

COURSE TITLE: Physics II

CREDITS: 4 (Minimum 90 hours) (54 hours lecture, 36 hours lab)

COURSE DESCRIPTION: Wave, sound, optics, light, electricity, magnetism, atomic physics

PREREQUISITE: Physics I

GOALS:

1. To support technical programs.
2. To enable the students to more successfully cope with change in employment, community and family.
3. Develop problem-solving skills, especially by applying mathematical skills to physical situations.
4. To utilize computers for data analysis in a lab setting.
5. To provide a hands-on lab experience that encourages teamwork and responsibility in the laboratory.
6. To enable students to prepare technical reports.
7. To provide an elective science to fulfill the science requirement* for a nontechnical AAS degree.

   (*As proposed by the General Education Task Force Science Subcommittee)

COMPETENCIES:

Electricity, magnetism, electromagnetic induction, capacitance and inductance, wave behavior, sound optics-light, atomic and nuclear physics

FOR DISCUSSION ONLY

Physics

District	Course Title	Course Number	Credits
(NWTC) Northeast	Tech Science I & II	806-150 & 806-160	3,3 4 hrs. ea
(LTC) Lakeshore			
(MPTC) Moraine Park	Tech Science I & II Tech Physics, Physics	806-151 & 806-152 806-155 & 806-120	3,3 3,4
(GTC) Gateway	Physics I & II	806-151 & 806-152	3,3
(MATC) Milwaukee	Technical Physics I & II Physics for Technology	806-151 & 806-152 806-157	4,3 5
(WCTC) Waukesha County	Tech Physics I & II	806-151 & 806-152	3,3 5 hrs. ea
(BTC) Blackhawk			
(FOUR) Madison	Technical Science I & II	806-151 & 806-152	3 or 4
(MSTC) Midstate	Technical Science I & II	806-151 & 806-152	3,3
(NCTC) North Central	Technical Physics I & II	806-151 & 806-152	3,3
(WWTC) Western Wisconsin			
(CVTC) Chippewa Valley			
(NATC) Nicolet			
(WITC) Indianhead	Tech Science I & II Tech Science III	806-151 & 806-152 806-153	3,3 3
(SWTC) Southwest			
(FVTC) Fox Valley	Physics I & II	806-160 & 806-165	2,2

FOR DISCUSSION ONLY

01/90

COURSE NUMBER: 806-121

COURSE TITLE: Anatomy and Physiology I

CREDITS: 4 (minimum 90 hours; 54 hours lecture, 36 hours lab)

COURSE DESCRIPTION:

Anatomy and Physiology I is the first semester in a two-semester series that studies human anatomy and physiology according to the body's systems approach, but with consideration of the functional interrelationships of the various systems. Fundamental concepts and principles of cell biology, histology, integumentary system, skeletal system, muscular system, and the nervous system (including the special senses) are studied.

Note: This course is designed specifically for Associate Degree Technical Nursing students. This course may, or may not be appropriate for other associate degree programs.

PREREQUISITE:

Technical college chemistry or completion of chemistry competency test; technical college biology or equivalent.

GOALS:

- To differentiate and compare the various structures of the body and identify these on specimen or model.
- To contrast and compare the normal functions of the various structures of the body.
- To develop the ability to see the human body as a complex structural and functional unit which is affected by external and internal environmental changes.
- To show the interrelationship between structure and function of the entire organism.

CONTENT:

A. Body Plan and Organization

B. Topography

C. Surfaces, Planes, Cavities

D. Homeostasis

E. Cell Structure

F. Cell Function

G. Mitosis/Meiosis (Introduction)

H. Tissues/Membranes

I. Integumentary System

J. Skeletal System

- Structure and Formation of Bones
- Calcification/Growth
- Names and Markings of Bones

FOR DISCUSSION ONLY

- Organization of Skeleton
  - Skull
  - Vertebral Column
  - Thorax
  - Appendages
- Male and Female Skeletal Difference
- Arthrology
  - Composition
  - Classification
  - Characteristics
  - Examples
  - Movements Allowed

K. Muscular System

- Three Types of Muscle Tissue
  - General Characteristics
  - Location
  - Function

L. Skeletal Muscle

- Structure
  - Microscopic
  - Macroscopic (with connective tissue components)
- Function
- Energy Sources for Contraction
- Chemistry of Contraction
- Mechanical Action of Contraction
- Stimulation
- Contraction
  - Tonic
  - Isotonic
  - Isometric
  - Twitch
  - Tetanic
  - Abnormal
- Principles of Contraction
  - All-or-None Law
  - Summation
  - Group Action - Prime Movers, Antagonists, Synergists
- Naming
  - Muscles Grouped According to Location
  - Muscles Grouped According to Function
- Muscles - function, location
  - Head and Neck
  - Trunk
  - Upper Extremity
  - Lower Extremity

M. Nervous System

- Organization
- Divisions
- Nervous Tissue cells
  - Neuron
  - Neuroglia

FOR DISCUSSION ONLY

- Characteristics of Neurons
- Classification of Neurons
- Regeneration of Nervous Tissue
- Neurotransmitters
- Synaptic Transmission
- Neurons
  - Function
  - Mechanism of Resting Potential
  - Mechanism of Action Potential
  - Electrical and Chemical Transmission of Stimulus
- Brain
  - Division, Origin, and Function of Component Parts
  - Cerebrum (Cortex, Basal Ganglia)
  - Hypothalamus
  - Thalamus
  - Cerebellum
  - Brain Stem
    - Midbrain
    - Pons
    - Medulla Oblongata
  - Reticular Formation
  - Protection of Brain
    - Cranial Bone
    - Meninges
    - Cerebrospinal Fluid
- Cranial Nerves
- Spinal Cord
- Spinal Reflexes
- Spinal Nerves - Spinal Tracts (sensory and motor)
  - Roots
  - Plexuses and Peripheral Nerve
- Coordination of Visceral Activity
  - Chemical Mediators
  - Sympathetic
  - Parasympathetic

N. The Eye

- Structures
- Vision pathways

O. The Ear

- Structures
- Hearing and balance

RECOMMENDATIONS REGARDING ANATOMY AND PHYSIOLOGY

1. It is recommended that a challenge exam in anatomy and physiology be designed by a consortium of VTAE anatomy and physiology instructors for the purpose of providing a testing-out option for Anatomy and Physiology I and II.

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Anatomy & Physiology 1 (Nursing - Technical)

District	Course Title	Course Number	Credits
(NWTC) Northeast	Anatomy & Physiology	806-187	3
(LTC) Lakeshore	Anatomy & Physiology	806-105	3
(MPTC) Moraine Park	Anatomy & Physiology	806-118	3
(GTC) Gateway	Anatomy & Physiology	806-137	4
(MATC) Milwaukee	Biomedical Science 1 Anatomy & Physiology 1	806-101 806-103	6 5
(WCTC) Waukesha County	Anatomy & Physiology 1	806-118	3
(BTC) Blackhawk	Anatomy & Physiology	806-131	4
(FOUR) Madison	Anatomy & Physiology	806-107	4
(MSTC) Midstate			
(NCTC) North Central	Biomed 1	806-142	5
(WWTC) Western Wisconsin	Anatomy & Physiology	513-112	4
(CVTC) Chippewa Valley	Anatomy & Physiology	806-140	5
(NATC) Nicolet	Anatomy & Physiology 1	806-141	4
(WITC) Indianhead	Anatomy & Physiology 1	806-121	5
(SWTC) Southwest	Anatomy & Physiology	806-103	4
(FVTC) Fox Valley	Life Science 1	806-120	5

FOR DISCUSSION ONLY

COURSE NUMBER: 806-123

COURSE TITLE: Anatomy and Physiology II

CREDITS: 4 (minimum 90 hours; 54 hours lecture, 36 hours lab)

COURSE DESCRIPTION:

Anatomy and Physiology II studies human anatomy and physiology according to the body's systems approach, but with consideration of the functional interrelationships of the various systems. Emphasis is on the normal structure and function of the endocrine system, cardiovascular system, respiratory system, digestive system, metabolism, the urinary system, fluid and electrolyte balance, acid-base balance and the reproductive system.

Note: This course is designed specifically for Associate Degree Technical Nursing students. This course may, or may not, be appropriate for other associate degree programs.

PREREQUISITE:

Anatomy and Physiology I

GOALS:

- To differentiate and compare the various structures of the body and identify these on specimen or model.
- To contrast and compare the normal functions of the various structures of the body.
- To develop the ability to see the human body as a complex structural and functional unit which is affected by external and internal environmental changes.
- To show the interrelationship between structure and function of the entire organism.

CONTENT:

The course will include the following topics (minimum):

A. Endocrine System

- Definition of Hormone
- Feedback Systems and Control of Secretion
- Pituitary (Hypophysis)
  - Anterior (Adenohypophysis)
    - Prolactin
    - Trophic Hormones
    - Melanocyte Stimulating Hormone
    - Control of Secretion
    - Effects of Hypo and Hypersecretion
  - Posterior
    - ADH
    - Oxytocin
    - Control of Secretion
    - Formation Site

FOR DISCUSSION ONLY

- Adrenal Glands
  - Glucocorticoids
  - Mineral Corticoids
  - Sex Hormones
- Thyroid Gland
  - Thyroxine
  - Calcitonin
  - Parathyroid Glands
  - Parathyroid Hormone
- Additional Hormones
  - Insulin and Glucagon
  - Estrogen and Progesterone
  - Melatonin
  - Thymosin
  - Prostaglandins (Tissue Hormones)
- Hormonal Responses to Stress

B. Cardiovascular System

- Blood
  - Components
  - Hemostasis
- Lymph and Lymph Organs
- Heart
  - Blood Supply, Blood Flow
  - Cardiac Cycle, Pressure and Volume Changes
  - Heart Sounds
  - Conduction System
    - Regulating Factors of Rate, Pulse
  - Blood Vessels
    - Control of Blood Flow and Pressure
    - Major Vessels of Systemic, Pulmonary, Portal Circulation
  - Lymph Vessels, nodes, associated organs

C. Immune System

- Humoral Immune Response
- Cell Mediated Immune Response
- Immunodeficiencies

D. Respiratory System

- Physiology of Respiration
  - Pulmonary and Alveolar Ventilation
  - Volumes of Air Exchanged
  - Exchange of Air in Lungs and Tissues
    - Transport of Gases
    - Acid-Base Balance Regulation by Lungs
    - Accessory Functions of Lungs
  - Controls of Breathing
  - Placenta as a Lung
  - Respiratory Changes at Birth

E. Digestive System

- Structural Layers of Alimentary Tract
- Organs of Digestive Tube and Accessory Organs
- Digestion of Foodstuffs

FOR DISCUSSION ONLY

- Purpose, Kind (Mechanical, Chemical), Control of Digestive Juice Secretion
- Absorption of Digested End-products
  - — From Mouth
  - — From Stomach
  - — From Small Intestine
  - — From Large Intestine
- Utilization of Digested End-products
  - — Monosaccharides
  - — Amino Acids
  - — Glycerols and Fatty Acids

F. Metabolism

- Carbohydrate Metabolism
- Lipid Metabolism
- Protein Metabolism
- Energy Balance
- Heat Loss Mechanism

G. Urinary System

- Kidneys
  - Size, Shape, Location
  - External Structure
  - Internal Structure
  - Microscopic Structure (Nephron)
  - Blood Supply
  - Urine Formation and Regulation of Blood Composition
  - Factors Regulating and Altering Urine Volume
  - Influence on Blood Pressure
  - Mechanisms Maintaining Homeostasis of:
    - — Fluid
    - — Electrolytes
- Ureters
- Urethra
- Bladder
  - Innervation
  - Micturition
- Urine
  - Physical Characteristics
  - Chemical Composition

H. Fluid, Electrolyte Balance

- Fluid compartments
- Composition of body fluids
  - Electrolytes
  - Non Electrolytes
- Regulation of Water Intake and Output

I. Acid-Base Balance

- Buffer Systems
- Respiratory System Regulation
- Renal System Regulation
- Abnormalities of Acid-Base Balance

FOR DISCUSSION ONLY

J. Reproductive System

- Male Reproductive System
  - Organs
    - Testes
    - Duct System
    - Accessory Glands
    - External Genitalia
    - Hormones--Pituitary and Testes
  - Female Reproductive System
    - Organs
  - Hormones--Pituitary and Ovaries
    - Physiological Role
    - Controls of Production
  - Pregnancy--Hormones of
    - Sources
    - Physiological Effect
  - Development and Inheritance

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FOR DISCUSSION ONLY

Anatomy & Physiology 2 (Nursing - Technical)

District	Course Title	Course Number	Credits
(NWTC) Northeast	Anatomy & Physiology 2	806-182	3
(LTC) Lakeshore	Anatomy & Physiology II	806-106	3
(MPTC) Moraine Park	Anatomy & Physiology II	806-118	3
(GTC) Gateway	Anatomy & Physiology II	806-138	4
(MATC) Milwaukee	Biomedical Science 2	806-102	6
(WCTC) Waukesha County	Anatomy & Physiology 2	806-119	3
(BTC) Blackhawk			0
(FOUR) Madison	Anatomy & Physiology II	806-108	4
(MSTC) Midstate			0
(NCTC) North Central	Biomed Science II	806-143	5
(WWTC) Western Wisconsin	Anatomy & Physiology	513-122	4
(CVTC) Chippewa Valley			0
(NATC) Nicolet	Anatomy & Physiology	806-142	2
(WITC) Indianhead			0
(SWTC) Southwest			
(FVTC) Fox Valley	Life Science II	806-121	4

FOR DISCUSSION ONLY

Section VII. Considerations Regarding Methodologies

It must be recognized that the outcomes identified in the Role Statement are not necessarily isolated by course. They are outcomes that must be taught across the curriculum. Critical thinking, heightened global and social awareness, ethics, communication, etc., are basic to education and learning and therefore should be presented in all learning environments. The implications of this force us to rethink our traditional views on education. The outcomes outlined in the Role Statement encourage us to consider a variety of teaching strategies. They also encourage us to give consideration to greater collaboration among faculties throughout our institutions so that these outcomes can be taught across the curriculum.

In addition to traditional lecture/discussion, faculty subcommittees offered the following suggestions:

Writing Across the Curriculum
Reading Across the Curriculum
Collaborative Learning
Community Resources
Computer Usage
Problem-Solving
Questioning Strategies
Simulation

It was agreed that there is a need to further develop this list and to focus attention on implementation of these strategies. This will provide an appropriate agenda for professional development activities at local districts and between districts. The faculty recommendation to provide more frequent professional meetings in the form of annual state-called conferences stems from the instructors' desires to promote greater sharing of teaching strategies among our faculties.

Section VIII. Subcommittee Recommendations for Considerations by the Task Force.

Numerous recommendations were made through the subcommittees. It was agreed that some of the recommendations should be more appropriately considered by the Instructional Services Administrators while others should be heard and acted upon by the Task Force.

The following pages, 68-75, contain those recommendations heard by the Task Force. They are not necessarily endorsed by the Task Force; however, they represent instructor points of view and are included for informational purposes.

Social Science

1. Strongly recommend and resolve that general education instructors participate actively with program Advisory Committees on a regular basis.

2. To provide funds and a yearly state called meeting to provide continuity and development of course materials for general education.

3. Recommend that the title American Institutions be changed to Contemporary American Society.

4. Recommend that transfer within the VTAE System shall enable sutdents to substitute Contemporary American Society for Sociology and vice-versa to fulfill their program requirements.

5. Recommend that a General Education Task Force examine the issue of literacy requirements for all General Education courses.

6. The subcommittee addressing the Introduction to Psychology course agrees that this course differs from Psychology of Human Relations by providing a greater emphasis on:

    1. terminology of the discipline
    2. the study of neurological and endocrine systems including stress
    3. heredity, genetic counseling, and related concepts
    4. research, methodology, and the scientific method
    5. the historical origins of the discipline
    6. therapeutic approaches and special needs population
    7. assessment and the evolution of psychometrics

7. Recommend that transfer within the VTAE system shall enable students to substitute Introduction to Psychology for Psychology of Human Relations to fulfill their program requirements.

Math

1. There should be a minimum of one state-called mathematics meeting per year, and it is suggested that the mathematics instructors in the technical colleges in each region meet several months prior to the state meeting to share concerns and to suggest agenda items for the state meeting.

   Comment: We recognize the importance of establishing linkages among the 16 districts in the state, as well as establishing a network among individual instructors in all the schools. These contacts are extremely important for sharing new ideas and learning from one another.

2. There should be a standardized procedure for handling transfer of mathematics credits from one VTAE district to another within the state.

   Comment: If transfer of credit from the VTAE schools to the state university system is to be fully realized, the VTAE schools themselves should be able to demonstrate, by example, a method of transfer of credit among the 16 districts of the state.

   Procedure: To accomplish this, each technical college, with leadership of the administrator in charge of instruction, should designate one or more math instructors as a contact person(s). All 16 districts would have a list of the names of these instructors. All math instructors and program counselors should be aware of the designated person(s) at each school.

   When a student wishes to transfer math credits from one VTAE district to another, he or she would be given the name of the contact person at the receiving institution. If possible, he or she would also be given a copy of the course outline for the course he or she wishes to transfer. If the instructor at the receiving school has any questions concerning course content, etc., he or she would contact the designated instructor at the sending institution. It is the intent of the instructors to grant the student as much credit as possible when competencies are clearly demonstrated and to attempt to provide a means of making up any deficiencies. Some schools now use the concept that is referred to as the "partial credit" to accomplish this. For example, if the student has 3 credits that would transfer, but the course at the receiving institution is 5 credits or requires additional work the student has not done, the student could register for the remaining 2 credits and complete the work that was missing, whether in a lab or a classroom setting.

It is suggested that any student seeking to transfer credits that were earned more than one year before the date of transfer be required to show an acceptable level of competence through a challenge exam. The type of exam and level of competence required would be determined at each VTAE district.

This procedure would provide a consistent approach to transfer of credit and could also serve as a working model of a credit transfer format to the university system.

3. Existing prerequisites should be strictly enforced.

Comment: It is our belief that it is in the best interests of the students to have an open door policy to the school, but not to specific programs. When we allow students to register for courses for which they are not adequately prepared, we are setting them up for failure, rather than success. If existing prerequisites for specific programs and/or courses are no longer applicable, they should be revised.

4. The state VTAE system should require all vocational and associate degree students to demonstrate minimum math proficiency in certain areas.

Comment: This recommendation is based on the concept that one goal of technical colleges in Wisconsin is to prepare students to be successful on the job, in the community, and on a personal level (family life). This is clearly expressed by an article from Academic Connections, Summer, 1989. In his article titled "NCTM Proposed New Standards for School Mathematics," John Dossey states:

> The preparation in mathematics given school children in the past is no longer adequate. Students can no longer make their way in the workplace on the basis of clever hands, strong backs, and shopkeeper arithmetic. Today's students need to be able to think, reason, and communicate as they work to solve problems. They need to be able to see connections between problems, their mathematics, and other subjects as they confront situations in the workplace and in their daily lives.

Procedure: These proficiencies would be measured at some point during the student's tenure in our schools. We are currently aware of a standardized test that would measure all of the areas listed below. It is suggested that a statewide committee of VTAE math instructors be established to develop such a test.

Competency would be required in the following areas for both vocational diploma students and associate degree students:

1. Basic arithmetic skills. (Addition, subtraction, multiplication, and division with whole numbers, fractions, decimals, and percent.)
2. Area, volume, perimeter.
3. Ratio and proportion.
4. Measurements (English - Metric conversions).
5. Rounding and estimating.
6. Simple formula evaluation.
7. Graphic interpretation.
8. Calculator skills.

In addition to the topics listed above, associate degree students will also be required to show proficiency in the following areas:

1. Signed numbers.
2. Linear equations.
3. Formula rearrangement.
4. Display of graphic data.
5. Descriptive statistics (mean, median, mode).

It should be noted that these minimum math proficiencies in no way replace any program requirements. They are, as stated, basic skills which we believe that every technical college graduate should be able to demonstrate proficiency in upon entering a chosen career.

General Education Task Force
Science Subcommittee
Madison, Wisconsin

September 13-14, 1989

General Discussion and Recommendations

1. It is recommended that standards for science courses be raised in order to provide better support for occupational programs. (Appropriate competency testing should be put in place.)

2. It is recommended that all science instructors (day, evening, weekends, summers) be properly credentialed for teaching science courses. Science instructors should be provided opportunities for professional growth in their areas of specialization.

3. It is recommended that there be a statewide common Technical Physics course consisting of two semesters, 4 credits per semester, minimum.

4. It is recommended that there be a statewide common VTAE General Chemistry course consisting of one semester, 90 hours, 4 credits, minimum.

5. It is recommended that there be a statewide common VTAE Anatomy and Physiology course offered consisting of two semesters, 4 credits per semester, minimum.

6. It is recommended that there be a statewide common VTAE Microbiology course consisting of one semester, 90 hours, 4 credits, minimum.

7. It is recommended that the associate degree science courses have a laboratory component with the following minimum number of hours: Microbiology, 2 hrs/wk; Physics I, 2 hrs/wk; Physics II, 2 hrs/wk; Anatomy and Physiology I, 2 hrs/wk; Anatomy and Physiology II, 2 hrs/wk; and General Chemistry, 2 hrs/wk.

8. It is recommended that curriculum development should be a cooperative effort with program and science instructors working together as "equal partners" with advisory committees and program instructors.

9. It is recommended that there be statewide basic skills testing with a science component for program students requiring science courses. Along with this evaluation should be prescribed pre-technical, remedial programming for students deficient in basic knowledge.

10. It is recommended that there be more science pre-technical remedial courses offered, and the cost of these courses be covered by state funds.

11. It is recommended that science teachers have more opportunities to work together in workshops and state-called meetings to continue to work on common science courses.

12. Students receiving the A.D. from the VTAE system receive the Associate Degree of Applied Science; therefore it is recommended that a course be designed for a minimum of four science credits for **all** associate degree programs at VTAE colleges in order to provide a balanced education for our students (e.g., general physics, health science, environmental biology, or chemistry for living).

Concerns

Since science is not one of the 15 general education credits that are protected under core general education courses, the following concerns need to be noted:

1. There is concern as to the impact these science recommendations for number of credits and hours will have on programs.
2. There is concern for the loss of uniqueness of the science courses and the loss of integration into existing programs.
3. The common course outlines in science include the minimum topics that must be covered for transferability; program applications must still be encouraged.

Associate degree of Applied Science outcomes as supported by science education.

1. Communication
   Encourage clear and concise basic verbal and written expression by
   - Technical vocabulary usage
   - Interpretation of data: graphical interpretation
   - Written laboratory reports
2. Use of Technology
   - Apply scientific concepts and principles to changing occupational clusters
   - Empower instructor to teach current and emerging technologies for every day life
3. Critical Thinking
   - Apply performance standards
   - Define problems
   - Develop hypothesis
   - Data is recorded
   - Findings are verified

   Incorporate Techniques in problem solving

   - Assimilation of knowledge
   - Validation techniques
4. Social Interaction
   - Encourage team work and responsibility in the laboratory
5. Computation
   - Application of math skills
   - Data manipulation techniques
   - Accuracy in accumulation of data

6. Global Awareness

   - Relate impact of technology on environment
   - Responsible use of technology
   - Encourage discussion of competition and global economy

7. Self Awareness

   - Promote self-esteem in students via teaching techniques

8. Work Ethic

   - Encourage integrity and responsibility

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INSTRUCTOR POSITION ON CONDITIONS TO SUPPORT TEACHING STATEWIDE COMMUNICATION COMPETENCIES

The attached statewide competencies are packaged with corresponding class sizes and class loads that make the number of required papers and speeches possible to achieve. For instance, if 30 students are enrolled in a speech class, the instructor cannot be "required" to assign a "...minimum of six speech presentations."

These competencies can be required only if the enrollment numbers and teaching loads are also accepted.

Representatives from all 16 districts agreed they could meet these competencies with administrative support of the following:

1. The number of students per section be limited to 20.
2. The number of hours of instruction be limited to 15 per week per instructor.

The above guidelines already exceed the national standards established by the National Council of Teachers of English:

"1. **English faculty members should never be assigned more than 12 hours a week of classroom teaching** (emphasis theirs). In fact, the teaching load should be less, to provide adequate time for reading and responding to students' writing; for holding individual conferences; for preparing to teach classes; and for research and personal growth.

2. **No more than 20 students should be permitted in any writing class** (emphasis theirs). Ideally, classes should be limited to 15. Students cannot learn to write without writing. In sections larger than 20, teachers cannot possibly give student writing the immediate and individual response necessary for growth and improvement." (1987)

With these guidelines in mind, the General Education Task Force Communications Committee respectfully submits the enclosed competencies for Written Communication, Oral/Interpersonal Communication, Technical Reporting, and Speech.

Prepared by Jill Stiemsma and Gary Kirby at the request of 35 instructors representing 16 districts present at the Communications State Called Meeting, Thursday, September 14, 1989.

Section IX. Conclusion

We feel the General Education Task Force has made excellent progress. We wish to acknowledge all the individuals who gave of their time and energy. Their efforts were greatly appreciated. A special thank you to Richard Muirhead, MATC - Milwaukee, Social Science instructor, for his leadership in putting the report together.

This report signifies the first step being completed. Our progress in general education has just begun. Upon approval of the Task Force recommendations, implementation becomes the reponsibility of each Wisconsin Technical College district. It is our sincere hope that each district will review this report, support the recommendations, and move to implement these changes. These changes will bring about a comprehensive unified approach for the education of our students.

A commitment to these changes can only enhance the quality of education our students will receive to be effective and successful in the workplace, in their community, and home.

Phil and Lori

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